ROCKWOOL®

TECHNICAL INSULATION

Rockassist®

The online calculation program
for technical insulation

rockassist.com

NOW ONLINE!

The new Rockassist calculation tool – free of charge!

EDITION: 03/2018 ENGL. INTERN.

Expert knowledge inside

Rockassist
online calculation program for calculating the ideal insulation thickness, maximise operational energy efficiency and thus reduce energy costs and CO_2 emissions.

Register for free on **rockassist.com**

Rockassist

The online expert tool for technical insulation

Jam-packed with expert skills and knowledge

Rockassist is a unique calculation program available free of charge from ROCKWOOL Technical Insulation.
It enables you to calculate the ideal insulation thickness for technical installations and thus maximise operational energy efficiency and reduce energy costs and CO_2 emissions.

This expert tool puts the extensive consulting skills and experience in the field of technical insulation at your fingertips that only ROCKWOOL Technical Insulation can offer.

In this brochure you will learn about our free customer-oriented service which gives you an easy way of calculating all of the important factors in technical insulation – from personal protection and heat loss to cooling of the media inside the equipment. It includes multiple analyses of various parameters, plausibility checks and ProRox product recommendations.

Rockassist gives you all the options – no matter whether you just want to make a quick initial estimate or you're making a final decision on what the ideal insulation solution is, complete with an authoritative report on the results. Take advantage of them!

A calculation program for everyone and everything

Anyone involved in the field of energy efficiency or technical insulation in any way can use Rockassist for their specific purposes – it's a benefit to engineers, insulation installers, mechanical contractors, dealers, and plant operators alike. It is useful for providing your customers with detailed advice or making an initial estimate of the energy efficiency to be gained by insulating a technical installation.

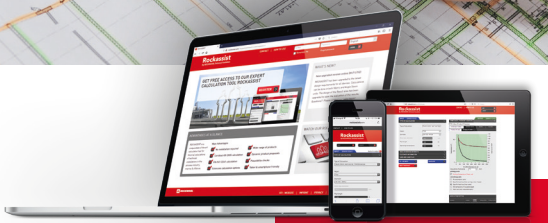
Rockassist is a helpful expert tool which pays off to use regularly and intensively for the following professionals, fields and company divisions:

- Mechanical engineer
- Purchasing manager
- Project manager
- Maintenance manager
- Consultants
- Managing director
- External sales personnel
- Sustainability manager
- Internal sales staff
- Plant owner
- Engineer (EPC)
- Mechanical contractor
- Insulation contractor
- Distributor
- Testing institutes
- Shipbuilders

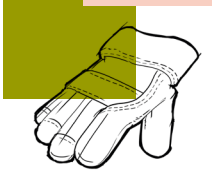
Rockassist

Only true experts can offer benefits like these:

- Free thermotechnical calculation program
- Calculations in conformity with VDI 2055 (certified) and EN ISO 12241
- Automatically recommends the most optimal product solution
- Online-based tool – no installation necessary
- Simple intuitive operation
- Wide range of calculation options
- Plausibility check integrated into the system – straight-forward graphic overview of the calculation results (personal protection, heat loss, etc.)
- Basic technical knowledge is all it takes to obtain expert-level results
- Simultaneous calculations in a single step
- Complete report on the results can be sent directly to customers via E-mail
- Runs on all of the standard operating systems and internet browsers
- Available on smartphone and tablet
- Input of data files can be stored locally



Register online at **rockassist.com** and start calculating for free!



Technical skills you can count on

State-of-the-art technological expertise meets +80 years of experience

Rockassist was developed under the best conceivable professional conditions. After all, the combined skills and technical knowledge of our experts went into this unique calculation program.

This means that we aren't just giving you superficial answers to your questions – we have extensive knowledge of industrial installations. And it means we've put nothing less than our entire store of expertise and practical findings into the specific needs and requirements which are important to you. All of this is reflected in Rockassist and provides you with the certainty that you can count on all of our expert knowledge in this unique calculation service.

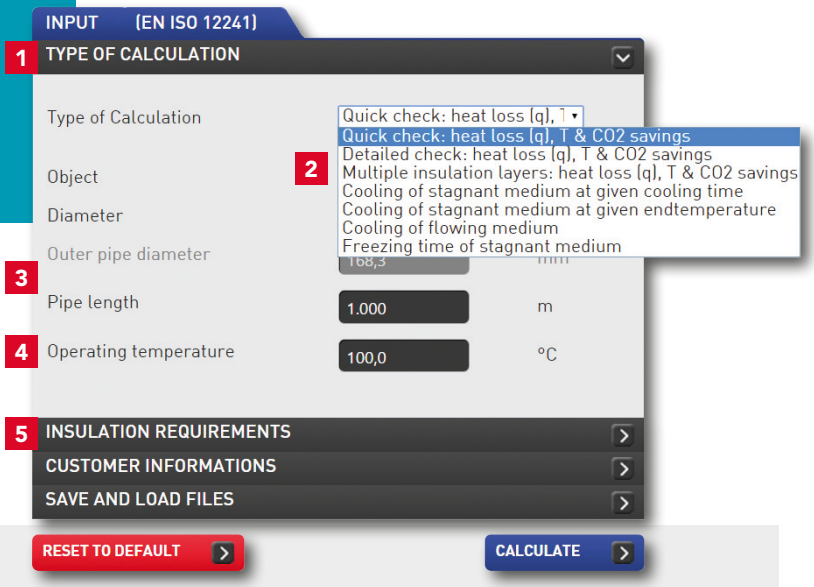
You also benefit from ROCKWOOL Technical Insulation's +80 years of experience which went into Rockassist as well as our other helpful expert tools. This includes our extensive ProRox Process Manual, which is full of facts on technical insulation. In it, you will find definitive descriptions for every application situation and part of a facility, as well as explanations on how to solve problems.

Expert knowledge for the ideal insulation solution

At temperatures in excess of 600°C in industrial plants, there's no doubt that technical insulation for individual areas of the plant is essential for ensuring personal safety, operational reliability, the economic efficiency of an industrial plant and the protection of the environment. Rockassist assists you in calculating the ideal insulation solution.

This calculation tool provides you with every method of determining the ideal insulation thickness based on the main parameters, such as maximum surface temperature, ambient temperature, maximum heat loss, etc., and selecting the right ProRox product to achieve the greatest possible degree of efficiency in every respect.

Efficient calculation - step by step



This is how easy it is:

Rockassist is distinguished by its simple, intuitive operation and virtually self-explanatory presentation.
Its input panel **1** provides you with seven ways of calculating technical insulation under calculation option **2**.

In particular, its **Quick Check Mode** guides you directly to a quick recommendation on the insulation to use and the thickness to select. All you have to do is enter a few parameters, such as:

3 Shape and dimensioning of the object to be insulated
4 Operating temperature of the medium

In the process, the program factors in data such as ambient temperature, wind speed and the type of cladding are given a default value that is common in practice.

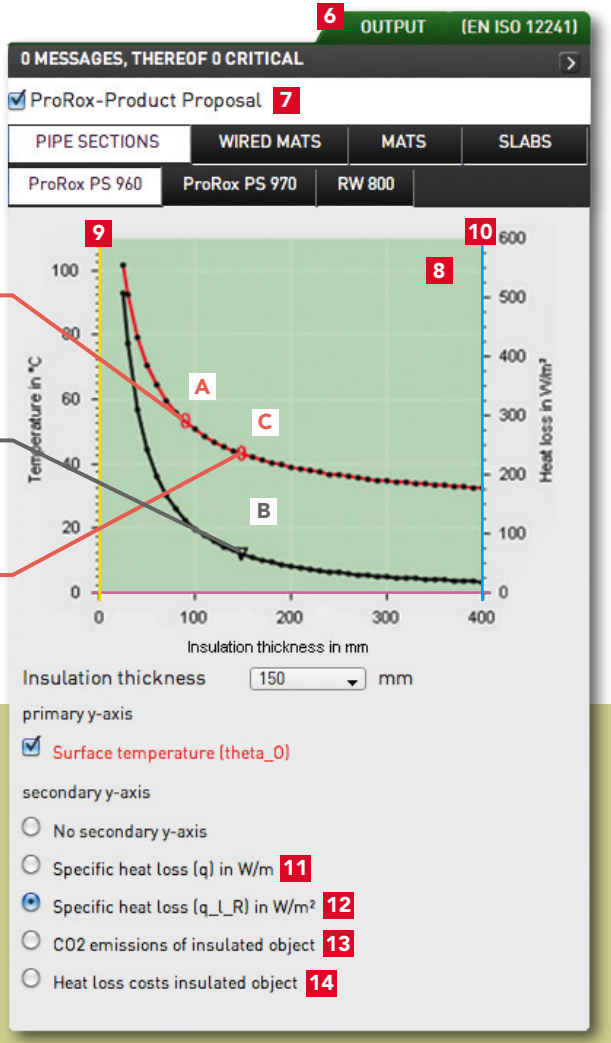
The **Detailed Check** function provides you with the full capabilities of Rockassist. In it, you can enter the specific object parameters yourself under the heading **5** Insulation system. The technical insulation will then be calculated based on precisely the application situation which you specified.
The advantage: It determines the optimised insulation in terms of insulation thickness and minimal heat loss.

Five additional calculation options are also available for experienced engineers and insulation installers who want to use the program on an in-depth level.

A Required thickness for personal protection **(90 mm),** corresponding surface temperature **53,1°C < 55°C** (chosen maximum surface temperature).

B Required thickness for personal protection and heat loss **(150 mm)** corresponding heat loss **(65,6 W/m²) < 70 W/m²** (chosen maximum heat loss in W/m²).

C Surface temperature = **43,1°C** with an insulation thickness of **150 mm**.



Find solutions at first glance

The program's output field **6** immediately provides you with a specific product recommendation **7** and a diagram of the results **8**.

The primary Y-axis **9** displays the surface temperature. Activating the display options will show the secondary Y-axis **10**, which depicts heat losses with insulated pipes in W/m **11** or specific heat losses in W/m² **12** or CO_2 emissions of the insulated objects **13** or the costs of the heat losses in €/m or €/m² **14**. The curve shows the correlation between insulation thickness, surface temperature and heat loss **A** **B** **C**.

This makes it easier to identify optimal, cost-effective solutions. Here's one example: A low insulation thickness of just 90 mm is often enough to meet the maximum surface temperature of 55°C required by accident prevention regulations. The curve also depicts the surface temperatures and heat losses which greater insulation thicknesses will prevent.
This means that you can tell at first glance that 150 mm-thick insulation will markedly reduce heat losses at only marginally higher costs.

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INSULATION SYSTEM

Insulation	s (mm)	lambda	theta_si (°C)	theta_se (°C)
ProRox PS 960	150	0,0580	300,0	43,1

RESULTS

Insulation thickness	150	mm
Wind speed for surface temperature calculations	0,00	m/s
Surface Temperature (theta_se)	43,1	°C
Wind speed for heat loss calculations	1,00	m/s
Heat loss insulated object	96,6	W/m
Heat loss insulated object (q)	65.6	W/m²
Total heat loss of the insulated object (Q)	845.806	kWh/a
CO2-Savings	13.186	t/a
Ratio of CO2-savings	97,9	%
Heat loss cost savings	3.875.944	€/a
Ratio of cost savings	97,9	%

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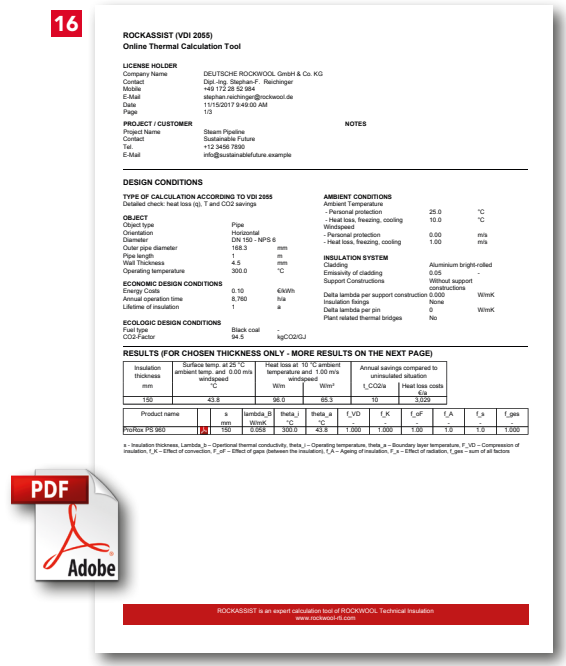

ROCKASSIST (VDI 2055)
Online Thermal Calculation Tool

LICENSE HOLDER

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PROJECT / CUSTOMER

Project Name	Steam Pipeline
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NOTES

DESIGN CONDITIONS

TYPE OF CALCULATION ACCORDING TO VDI 2055
Detailed check: heat loss (q), T and CO2 savings

OBJECT

Object type	Pipe	
Orientation	Horizontal	
Diameter	DN 150 - NPS 6	
Outer pipe diameter	168.3	mm
Pipe length	1	m
Wall Thickness	4.5	mm
Operating temperature	300.0	°C

ECONOMIC DESIGN CONDITIONS

Energy Costs	0.10	€/kWh
Annual operation time	8,760	h/a
Lifetime of insulation	1	a

ECOLOGIC DESIGN CONDITIONS

Fuel type	Black coal	-
CO2-Factor	94.5	kgCO2/GJ

AMBIENT CONDITIONS

Ambient Temperature		
- Personal protection	25.0	°C
- Heat loss, freezing, cooling	10.0	°C
Windspeed		
- Personal protection	0.00	m/s
- Heat loss, freezing, cooling	1.00	m/s

INSULATION SYSTEM

Cladding	Aluminium bright-rolled	
Emissivity of cladding	0.05	-
Support Constructions	Without support constructions	
Delta lambda per support construction	0.000	W/mK
Insulation fixings	None	
Delta lambda per pin	0	W/mK
Plant related thermal bridges	No	

RESULTS (FOR CHOSEN THICKNESS ONLY - MORE RESULTS ON THE NEXT PAGE)

Insulation thickness mm	Surface temp. at 25 °C ambient temp. and 0.00 m/s windspeed °C	Heat loss at 10 °C ambient temperature and 1.00 m/s windspeed W/m	W/m²	Annual savings compared to uninsulated situation t_{CO2}/a	Heat loss costs €/a
150	43.8	96.0	65.3	10	3.029

Product name		s mm	lambda_B W/mK	theta_i °C	theta_a °C	f_VD -	f_K -	f_oF -	f_A -	f_s -	f_gas -
ProRox PS 960	2	150	0.058	300.0	43.8	1.000	1.000	1.00	1.0	1.0	1.000

s - Insulation thickness, Lambda_b – Operational thermal conductivity, theta_i – Operating temperature, theta_a – Boundary layer temperature, F_VD – Compression of insulation, f_K – Effect of convection, F_oF – Effect of gaps (between the insulation), f_A – Ageing of insulation, F_s – Effect of radiation, f_gas – sum of all factors

ROCKASSIST is an expert calculation tool of ROCKWOOL Technical Insulation
www.rockwool-ti5.com

Quick calculation, detailed overview

Below the diagram depiction, you will find the Result table **15**, which shows the insulation system set up and the detailed results, such as insulation thickness, surface temperatures, total heat loss of the insulated object savings on energy (heat loss) costs and CO_2 emission reduction, etc. Rockassist thus provides you with a complete overview of the data based on the calculation made.

Save, print and send via E-mail

Last but not least, Rockassist provides you with perfect data management and transfer service. You can use the program to generate a comprehensive report on the results **16**, which you can save and print, if desired.
If you wish, you can even save the report as a PDF file and forward it directly to your customer. What more could you want?

Rockassist

Want to use it right away?
Nothing could be simpler.
Sign up now at rockassist.com!

All you have to do is sign up

1. Visit our website: **www.rockassist.com**
2. Register by entering your contact information for the user profile
3. Confirm your registration in the confirmation email

*Rockassist is for the moment only available in English, German and Czech language.

Knowledge from expert to expert
ROCKWOOL Technical Insulation certainly won't leave you on your own when it comes to making the best use of Rockassist. On your request we provide special seminars to instruct you on all the details of our expert tool.

Please contact your technical sales consultant for more information.

Rockassist Seminars on request!

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ROCKWOOL Technical Insulation

ROCKWOOL Technical Insulation is part of the ROCKWOOL Group and is offering advanced technical insulation solutions for the process industry as well as marine & offshore.

At the ROCKWOOL Group, we are committed to enriching the lives of everyone who comes into contact with our solutions. Our expertise is perfectly suited to tackle many of today's biggest sustainability and development challenges, from energy consumption and noise pollution to fire resilience, water scarcity and flooding. Our range of products reflects the diversity of the world's needs, while supporting our stakeholders in reducing their own carbon footprint.

Stone wool is a versatile material and forms the basis of all our businesses. With approx. 11,000 passionate colleagues in 39 countries, we are the world leader in stone wool solutions, from building insulation to acoustic ceilings, external cladding systems to horticultural solutions, engineered fibres for industrial use to insulation for the process industry and marine & offshore.

All explanations correspond to our current range of knowledge and are therefore up-to-date. The examples of use outlined in this document serve only to provide a better description and do not take special circumstances of specific cases into account. ROCKWOOL Technical Insulation places great value upon continuous development of products, to the extent that we too continuously work to improve our products without prior notice. We therefore recommend that you use the most recent edition of our publications, as our wealth of experience and knowledge is always growing. Should you require related information for your specific application or have any technical queries, please contact our sales department or visit our website **www.rockwool-rti.com.**

ROCKWOOL Technical Insulation

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